

REMARKS

Claims 1-43 are pending and stand rejected in the application. No claims are amended with this Response.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 4, 9-11, 13-16, 18, 19, 35, and 40 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,910,544, Ozawa et al., issued June 8, 1999 (herein “Ozawa”) in view of U.S. Patent No. 3,432,373, McMahon, issued March 11, 1969 (herein “McMahon”). Applicant respectfully traverses the rejection and requests reconsideration.

Contrary to the position taken in the Office Action, *Ozawa* does not disclose or teach completing vulcanization of a composition while it is in contact with a substrate in order to adhere the composition onto the substrate. Such a step is a feature of all of the rejected claims, including Claim 1 (step (d), completing the curing of said thermoplastic vulcanizate); Claim 10 (step (c), curing said partially cured thermoplastic elastomer composition while it is in contact with the substrate); Claim 22 (step (c), completing the cure of said coextruded partially cured dynamic vulcanizate); Claim 29 (step (e), completing the cure of said elastomer composition, while in contact with the substrate); and Claim 35 (step (f), completing the cure of said thermoplastic vulcanizate on said substrate). These features are missing from *Ozawa*, as will now be explained.

The passages cited in the Office Action demonstrate the deficiencies of *Ozawa*. The Office Action states that *Ozawa* provides that partially cured material is extruded from an extruder and may be subsequently placed on a substrate with an adhesive, citing to column 26, lines 47-64 of *Ozawa*. Then, the Office Action cites to column 52, lines 35-45 of *Ozawa* for the

proposition that the material placed on the substrate with an adhesive is fully cured. Upon closer examination, the cited passages from *Ozawa* do not teach or suggest the curing steps of the claims noted above. In fact, the noted passages explicitly state that such curing is not carried out.

For convenient reference, column 26, lines 43-64 of *Ozawa* are repeated below. This passage includes the lines 47-64 cited in the Office Action:

The process of producing a hose composed of an inner tube, reinforcing layer, and outer cover using the thermoplastic elastomer composition according to the present invention will be explained below.

First, pellets of the thermoplastic elastomer composition of the present invention composition are used and the thermoplastic elastomer composition extruded on a mandrel coated in advance with a release agent from a thermoplastic resin-use extruder by the cross-head extrusion method to form an inner tube. Then, another thermoplastic elastomer of the present invention or another general type is extruded on the inner tube to form the outer layer of the inner tube.

Next, an adhesive is coated, sprayed, or otherwise applied on the inner tube depending upon the need. Next, a reinforcing yarn or reinforcing steel wire is braided on the inner tube by a braiding machine. If necessary, an adhesive is coated on the reinforcing layer for the bonding with the outer cover, then another thermoplastic elastomer of the present invention or another general type is similarly extruded from a cross-head thermoplastic resin-use extruder to form the outer cover. Finally, the mandrel is pulled out, whereupon a low permeability hose of the present invention is obtained.

According to the passage an adhesive is coated on the inner tube and optionally on a reinforcing layer, after which a thermoplastic elastomer is extruded to form an outer cover. When all of the layers of a hose are thus constructed, the reference continues, the mandrel is pulled out to provide the hose. Significantly, the cited passage does not disclose any step of completing the cure of an elastomer composition while the elastomer composition is in contact with an adhesive or other substrate.

In fact, the elastomer composition extruded on the mandrel is certainly not applied to an adhesive or adhered to the substrate after vulcanization, because the mandrel is treated with a release agent, and afterward the mandrel is pulled out.

But the reference also confirms, in the very next paragraph, that there is no step of completing the cure. For convenience, column 26, line 65 to column 27, line 12 are reproduced here:

As the adhesive coated on the inner tube or on the reinforcing layer, an isocyanate, urethane, phenol thermoplastic resin, resorcin, chlorinated rubber, HRH, other adhesives may be mentioned, but an isocyanate or urethane adhesive is preferred.

In the above process of production, a mandrel was used, but there is no vulcanization process as required for the production of a normal rubber hose or rubber thermoplastic resin composite hose, and therefore, there is no compression deformation caused by the heat during vulcanization or deformation caused by the pressure during vulcanization and the dimensions of the hose can be easily maintained, and therefore, when strict dimensional precision is not particularly required, the hose may be produced without using a mandrel as well. *Emphasis added.*

In contrast to the rejected claims, the above passages from columns 26 and 27 of the reference establish that after an elastomer composition is applied to build up a hose, with or without an adhesive, the mandrel on which the hose is built up is pulled out providing a low permeability hose without the need for any vulcanization. The passage even explains the advantages of making the hose without vulcanization in that there is no compression deformation caused by the heat during vulcanization and so the dimensions of the hose can be easily maintained. In light of these and other teachings of the reference, Applicant respectfully submits that *Ozawa* does not teach to place a partially cured material into contact with a substrate or adhesive and subsequently fully cure it.

It would not have been obvious to modify *Ozawa* to provide a further step of completing the cure on the substrate, because the reference teaches that there are advantages to not carrying

out such an additional step. This being the case, any motivation to so modify the reference has to be seen as arising only from applicant's own disclosure, which is an improper use of hindsight.

McMahon does not overcome the deficiencies of *Ozawa* relative to the rejected claims. In particular, it does not overcome the reference's teaching that the advantages noted in column 27 are obtained by not vulcanizing.

For these reasons, Applicant respectfully requests the rejection be withdrawn.

Claims 2, 3, 20, and 36 are rejected under 35 U.S.C. § 103(a) as obvious over *Ozawa*, in view of *McMahon*, and further in view of U.S. Patent No. 5,792,348, *Eisinga*, issued August 11, 1998 (herein “*Eisinga*”). The deficiencies of the combined *Ozawa* and *McMahon* references are discussed above. Applicant respectfully submits *Eisinga* does not overcome those deficiencies. Applicant respectfully requests the rejection be withdrawn.

Claims 5-7, 21, and 37 are rejected under 35 U.S.C. § 103(a) over a combination of *Ozawa* and *McMahon*, and further in view of European Patent Publication 0132583, *DeAntonis*, published February 13, 1985 (herein “*DeAntonis*”). Applicant respectfully submits that *DeAntonis* does not overcome the deficiencies of the combined references. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claims 8, 17, and 39 are rejected as obvious over the combined *Ozawa* and *McMahon* references, and further in view of U.S. Patent No. 3,884,877, *Kolb*, issued May 20, 1975 (herein “*Kolb*”). As before, *Kolb* does not overcome the deficiencies of the combined *Ozawa* and *McMahon* references. Accordingly, Applicant respectfully requests the rejection be withdrawn.

Claims 12 and 38 are rejected under 35 U.S.C. 103(a) over the combined references and further in view of U.S. Patent No. 4,094,949, *Yokokawa et al.*, issued June 13, 1978. Applicant

respectfully submits *Yokokawa* does not overcome the deficiencies of the combined references. Applicant respectfully requests the rejection be withdrawn.

Claims 22-25 and 28 are rejected as obvious over *Ozawa* further in view of *McMahon* and *DeAntonis*. As noted above, *Ozawa* fails to teach, and in fact teaches against, the claim step of completing the cure of a vulcanizate on a substrate. Applicant submits that the combined *DeAntonis* and *McMahon* references do not overcome the deficiencies. Applicant respectfully requests the rejection be withdrawn.

Claim 26 is rejected as obvious over a combination of *Ozawa* in view of *McMahon* and *DeAntonis*, and further in view of *Yokokawa*. Applicant respectfully submits that *Yokokawa* does not overcome the deficiencies of *Ozawa* in view of *McMahon* and *DeAntonis* as discussed above. Applicant respectfully requests the rejection be withdrawn.

Claim 27 is rejected as obvious over *Ozawa* in view of *McMahon*, *DeAntonis*, and *Kolb*. Applicant submits that the secondary references do not overcome the deficiencies of *Ozawa* as applied to Claim 27. Applicant respectfully requests the rejection be withdrawn.

Claims 29-31 and 34 are rejected as obvious over *Ozawa* in view of *McMahon* and *Eisinga*. Applicant respectfully submits that *McMahon* and *Eisinga* singly or in combination do not overcome the deficiencies of *Ozawa* as applied to Claims 29-31 and 34. Applicant respectfully requests the rejection be withdrawn.

Claim 32 is rejected under 35 U.S.C. § 103(a) as obvious over *Ozawa* in view of *McMahon* and *Eisinga* and further in view of *Yokokawa*. Applicant respectfully submits that the secondary references do not overcome the deficiencies of *Ozawa* as discussed above. Applicant respectfully requests the rejection be withdrawn.

Claim 33 is rejected as obvious over *Ozawa* in view of *McMahon, Eisinga*, and further view of *Kolb*. Applicant submits that the secondary references do not overcome the deficiencies of *Ozawa* discussed above. Applicant respectfully requests the rejection be withdrawn.

CONCLUSION

For the reasons discussed above, Applicant believes that Claims 1-43 are in an allowable condition and respectfully request a Notice of Allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving any issues.

Respectfully submitted,

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